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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,611	04/02/2004	Sheng Sun	A7188/T47800	2449

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EXAMINER	
BASHORE, ALAIN L	

ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/817,611	SUN ET AL.	
	Examiner	Art Unit	
	Alain L. Bashore	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) *34-43* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-33 are drawn to process, classified in class 427, subclass 162.

II. Claim34-43 drawn to apparatus, classified in class 118, subclass 663.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case) the apparatus as claimed can be used to practice another and materially different process such as one for the formation of a film less than 3 micrometers.

3. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not

required because the inventions have acquired a separate status in the art due to their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. A telephone conversation with Mr. Boucher on 12-17-07 a provisional election was made without traverse to prosecute the invention of group I, claims 1-33. Affirmation of this election must be made by applicant in replying to this Office action.

5. Claims 34-43 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

7. The drawings are objected to because: figure s 1a and 1b appear to be prior art because they are described as "typical" therefore they should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8 If the description of "typical" in applicant's specification does not include "prior art", such must be made of record to obviate the drawing requirement.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1, 12-14, 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 12-14, 25-27, the recitation "trained" and "expert" are vague and indefinite because no meets and bounds are present.

In claim 1, the recitation of "....the parameters, an optical property, and the process conditions" is vague and indefinite because a parameter can be an optical property and or process condition.

Claim Rejections - 35 USC § 102 and 103

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13 Claims 1-3, 6-7, 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over M'Saad .

The applied reference to M'Saad has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention

disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

M'Saad discloses a method for processing a film over a substrate in a process chamber (abstract). flowing a process gas (claim 2) suitable for processing the film over-the substrate (claim 2) into the process chamber (13, fig. 4A) in accordance with a predetermined algorithm (par. 52, line 6) specifying process conditions (par. 52, line 13); monitoring a parameter (par. 59, gas flow rates of reactive gases) during processing of the film (implicit) over a thickness greater than 3 micrometers (implicit, since waveguide thickness is >10 micrometers, par. 26); and changing the process conditions (par. 48 and 53) in accordance with a correlation (implicit; refractive index dependent on dopant gas flow rates, par .83); process conditions need to be adjusted to achieve desired RI, par. 84-85, claim 20) among a value of the parameter (gas flow rate), an optical property of the film (refractive index, fig.7, 8;) and the process conditions (par. 52, 53).

Regarding the inherency of a thickness greater than 3 micrometers, as an alternative rejection such would be obvious to one with ordinary skill in the art because waveguide thickness requires multiple layers per se in absence of unexpected or unobvious results.

The alternative rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 1-3, 6-7, 11-20 are rejected under 35 U.S.C. 103(a) as being obvious over Breiner et al in view of (Park et al and Zhang et al).

Breiner et al discloses a method for processing a film over a substrate in a process chamber. A process gas is flowed for processing the film over the substrate into the process chamber in accordance with a predetermined algorithm specifying process conditions. A parameter is monitored during processing of the film over a thickness. There is changing process conditions in accordance with a correlation among a value of the parameter, an optical property of the film, and the process conditions. Neural networks and stress uniformity are disclosed (para 0004, 0008, 0025, 0041, 0043, 0059).

Breiner et al does not disclose monitoring the parameter during processing of the film over a thickness greater than 3 micrometers or the forming of an optical waveguide.

Park et al discloses film over a thickness greater than 3 micrometers for optical waveguide formation (col 7, lines 30-38).

It would have been obvious to one with ordinary skill in the art to include the thickness claimed in a optical waveguide formation because Breiner et al discloses monitoring of film thickness, Park et al discloses an optical element and Zang et al teaches optical elements require thin films that require monitoring (para 0003, 0004) .

Zang et al, Breiner et al and Park et al all disclose layer formation techniques.

16. Claims 21-22, 25-28, 30, 33 are rejected under 35 U.S.C. 103(a) as being obvious over Breiner et al in view of (Park et al and Zhang et al) further in view of Iyer.

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being obvious over Breiner et al in view of (Park et al and Zhang et al as applied to claims above and further in view of Iyer.

Breiner et al, Park et al and Zhang et al all do not disclose monitoring the refractive-index value of the film deposition.

Iyler discloses monitoring the refractive-index value of the film deposition (col 3, lines 34-38, .

It would have been obvious to one with ordinary skill in the art to include such because Lyler teaches precise control of coating thickness (col 2, lines 23-32).

17. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breiner et al in view of (Park et al and Zang et al) applied to claims above, and further in view of Chouinard.

Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breiner et al in view of (Park et al and Zhang et al) in view of Iyer as applied to claims above, and further in view of Chouinard et al.

Breiner et al and Park or Zang et al do not disclose vertical and horizontal profile optimizations.

Chouinard et al discloses vertical and horizontal profile for waveguides (col 26, lines 55-60) .

It would have been obvious to one with ordinary skill in the art to include the recitations of claims 4-5, 23-24 because Chouinard et al teaches disclose vertical and horizontal profile as important regarding waveguide operation.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alain L. Bashore whose telephone number is 571-272-6739. The examiner can normally be reached on about 7:30 am to 5:00 pm (Mon. thru Thurs.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alain L. Bashore/
Primary Examiner
Art Unit 1792